What is claimed is:

1. A method for etching an organic anti-reflective coating (OARC), comprising:

(a) providing a substrate having an organic anti-reflective coating (OARC) thereon;

(b) forming a patterned mask on the organic anti-reflective coating (OARC); and

(c) etching the organic anti-reflective coating (OARC) using a gas mixture comprising at least one of a hydrocarbon-containing gas and an oxygen-containing gas.

2. The method of claim 1 wherein the oxygen-containing gas is selected from the group consisting of oxygen (O_2), carbon dioxide (CO_2), carbon monoxide (CO) and sulfur dioxide (SO_2).

3. The method of claim 1 wherein the hydrocarbon-containing gas has a formula C_xH_y where x and y are integers.

4. The method of claim 1 wherein the hydrocarbon-containing gas is selected from the group consisting of methane (CH_4), ethylene (C_2H_4), ethane (C_2H_6) and ethylyne (C_2H_2).

5. The method of claim 1 wherein the organic anti-reflective coating (OARC) comprises a material selected from the group consisting of polyamide and polysulfone.

6. The method of claim 1 wherein the gas mixture further comprises an inert gas.

7. The method of claim 6 wherein the inert gas comprises one or more gases selected from the group consisting of nitrogen (N_2), argon (Ar), helium (He) and neon (Ne).

8. The method of claim 6 wherein the gas mixture comprises the hydrocarbon-containing gas and the inert gas at a hydrocarbon-containing gas:inert gas flow ratio

within a range of about 30:1 to about 3:1.

9. The method of claim 6 wherein the gas mixture comprises the oxygen-containing gas and the inert gas at an oxygen-containing gas:inert gas flow ratio within a range of about 5:1 to about 1:5.

10. The method of claim 6 wherein step (c) further comprises:

providing the hydrocarbon-containing gas and the inert gas at a hydrocarbon-containing gas:inert gas flow ratio of about 20:1 to 3:1;

maintaining the substrate at a temperature of about 10 to about 60 degrees Celsius;

applying a plasma power of about 500 W to about 1200 W;

applying a substrate bias power of about 50 W to about 200 W; and

maintaining a process chamber pressure within a range of about 1 mTorr to about 30 mTorr.

11. The method of claim 6 wherein step (c) further comprises:

providing the oxygen-containing gas and the inert gas at an oxygen-containing gas:inert gas flow ratio of about 5:1 to 1:5;

maintaining the substrate at a temperature of about 10 to about 60 degrees Celsius;

applying a plasma power of about 500 W to about 1200 W;

applying a substrate bias power of about 50 W to about 200 W; and

maintaining a process chamber pressure within a range of about 1 mTorr to about 10 mTorr.

12. A method of fabricating an integrated circuit, comprising:

(a) providing a substrate having an organic anti-reflective coating (OARC) formed on one of a metallic layer and a dielectric layer;

(b) forming a patterned mask on the organic anti-reflective coating (OARC); and

(c) etching the organic anti-reflective coating (OARC) using a gas mixture comprising at least one of a hydrocarbon-containing gas and an oxygen-containing gas.

13. The method of claim 12 wherein the oxygen-containing gas is selected from the group consisting of oxygen (O_2), carbon dioxide (CO_2), carbon monoxide (CO) and sulfur dioxide (SO_2).

14. The method of claim 12 wherein the hydrocarbon-containing gas has a formula C_xH_y where x and y are integers.

15. The method of claim 12 wherein the hydrocarbon-containing gas is selected from the group consisting of methane (CH_4), ethylene (C_2H_4), ethane (C_2H_6) and ethylyne (C_2H_2).

16. The method of claim 12 wherein the organic anti-reflective coating (OARC) comprises a material selected from the group consisting of polyamide and polysulfone.

17. The method of claim 12 wherein the gas mixture further comprises an inert gas.

18. The method of claim 17 wherein the inert gas comprises one or more gases selected from the group consisting of nitrogen (N_2), argon (Ar), helium (He) and neon (Ne).

19. The method of claim 17 wherein the gas mixture comprises the hydrocarbon-containing gas and the inert gas at a hydrocarbon-containing gas:inert gas flow ratio within a range of about 20:1 to about 3:1.

20. The method of claim 17 wherein the gas mixture comprises the oxygen-containing gas and the inert gas at an oxygen-containing gas:inert gas flow ratio within a range of about 5:1 to about 1:5.

21. The method of claim 12 wherein step (c) provides an etch selectivity for the organic anti-reflective coating (OARC) over the metallic layer of about 20:1.

22. The method of claim 12 wherein step (c) provides an etch selectivity for the organic anti-reflective coating (OARC) over the dielectric layer of about 30:1.

23. The method of claim 17 wherein step (c) further comprises:

providing the hydrocarbon-containing gas and the inert gas at a hydrocarbon-containing gas:inert gas flow ratio of about 20:1 to 3:1;

maintaining the substrate at a temperature of about 10 to about 60 degrees Celsius;

applying a plasma power of about 500 W to about 1200 W;

applying a substrate bias power of about 50 W to about 200 W; and

maintaining a process chamber pressure within a range of about 1 mTorr to about 30 mTorr.

24. The method of claim 17 wherein step (c) further comprises:

providing the oxygen-containing gas and the inert gas at an oxygen-containing gas:inert gas flow ratio of about 5:1 to 1:5;

maintaining the substrate at a temperature of about 10 to about 60 degrees Celsius;

applying a plasma power of about 500 W to about 1200 W;

applying a substrate bias power of about 50 W to about 200 W; and

maintaining a process chamber pressure within a range of about 1 mTorr to about 10 mTorr.

25. A computer-readable medium containing software that when executed by a computer causes a semiconductor wafer processing system to etch an organic anti-reflective coating (OARC) using a method, comprising:

(a) providing a substrate having an organic anti-reflective coating (OARC) thereon;

(b) forming a patterned mask on the organic anti-reflective coating (OARC); and

(c) etching the organic anti-reflective coating (OARC) using a gas mixture comprising at least one of a hydrocarbon-containing gas and an oxygen-containing gas.

26. The computer-readable medium of claim 25 wherein the oxygen-containing gas is selected from the group consisting of oxygen (O_2), carbon dioxide (CO_2), carbon

monoxide (CO) and sulfur dioxide (SO_2).

27. The computer-readable medium of claim 25 wherein the hydrocarbon-containing gas has a formula C_xH_y where x and y are integers.

28. The computer-readable medium of claim 25 wherein the hydrocarbon-containing gas is selected from the group consisting of methane (CH_4), ethylene (C_2H_4), ethane (C_2H_6) and ethylene (C_2H_2).

29. The computer-readable medium of claim 25 wherein the organic anti-reflective coating (OARC) comprises a material selected from the group consisting of polyamide and polysulfone.

27. The computer-readable medium of claim 23 wherein the gas mixture further comprises an inert gas.

28. The computer-readable medium of claim 27 wherein the inert gas comprises one or more gases selected from the group consisting of nitrogen (N_2), argon (Ar), helium (He) and neon (Ne).